Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of Verizon Communications Inc. and MCI, Inc. Applications for Approval of Transfer of Control	)))))))))	WC Docket No. 05-75

Declaration of B. Douglas Bernheim

May 9, 2005

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I. INTRODUCTION

I.1. Qualifications

(1) I am the Lewis and Virginia Eaton Professor of Economics at Stanford University. I have also served as Director of the Stanford Institute for Theoretical Economics (SITE) and Co-Director of the Tax and Budget Policy Program at the Stanford Institute for Economic Policy Research (SIEPR). I am a Senior Fellow of SIEPR, and a Partner with Bates White, LLC.

(2) I received my Ph.D. in Economics from the Massachusetts Institute of Technology in September 1982 and my A.B. from Harvard University, *summa cum laude*, in June 1979. My previous academic appointments include an endowed chair in Economics and Business Policy at Princeton University, where I was also Co-Director of the Center for Economic Policy Studies and an endowed chair in Risk Management at Northwestern University's J.L. Kellogg Graduate School of Management, Department of Finance.

(3) I have taught courses in Industrial Organization (Ph.D. level), Microeconomic Theory (Ph.D. level and undergraduate level), Game Theory (Ph.D. level), Public Economics (Ph.D. level and undergraduate level), Behavioral Economics (Ph.D. level), and Insurance (Masters level). My Ph.D.-level teaching covers both theoretical issues and applied econometrics (data analysis).

(4) I have published extensively in peer-reviewed academic journals and elsewhere on topics in industrial organization, strategic behavior, microeconomic theory, public economics, and other areas. My published work includes papers on the theory of cooperation and collusion, entry deterrence, and anticompetitive vertical practices. Many of my academic studies entail detailed analysis of microeconomic data using econometric methods.

(5) I have served on the editorial boards of several professional journals, including *Econometrica*, the *Quarterly Journal of Economics*, the *Journal of Public Economics*, and the *Journal of Financial Intermediation*. I am currently serving as co-editor of the *American Economic Review*, which is the journal of the American Economics Association and the profession's most widely read periodical.

(6) I have received a number of awards and professional recognitions, including election as a Fellow of the American Academy of Arts and Sciences, election as a Fellow of the Econometric Society, a Guggenheim Fellowship, an Alfred P. Sloan Foundation Research Fellowship, and an NBER-Olin Research Fellowship.

(7) I have been retained as a consultant or expert witness on matters of antitrust policy and regulation in numerous matters. I have conducted detailed studies of competition and market conditions in a variety of industries, including telecommunications, health care, pharmaceuticals, railroads, airlines, aerospace, financial markets, and a number of manufactured products. I have evaluated the competitive effects of mergers in markets for mobile telephone services, Internet services, hospital services, railroad transport, aerospace products, and industrial cable. I have studied the potential anticompetitive effects of vertical practices in long-distance telephone service, high-speed data transmission, and passenger airline service. I have examined alleged price-fixing conspiracies in markets for vitamins, thermal fax paper, securities brokerage, radio spectrum, construction supplies and tools, offshore oil drilling and transport, and workers' compensation insurance. I have sponsored testimony concerning these studies before various government agencies and judicial bodies. A copy of my curriculum vita and certain of my testifying experience is located in Appendix A.

I.2. Statement of tasks and work performed

(8) I have been asked to comment on the competitive implications of the proposed merger between Verizon and MCI.[1] The analysis contained in this affidavit constitutes an initial assessment of the concerns raised by this significant transaction, and is based on my general familiarity with the history and ongoing events in the telecommunications industry, as well as a review of public and non-public source data and information and materials submitted by the merging parties in

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1 I have previously submitted an affidavit in the SBC/AT&T matter. (Declaration of B. Douglas Bernheim, In the Matter of SBC Communications Inc. and AT&T Corp., WC Docket No. 05-65, April 25, 2005.) As I elaborate on further below, given the similarity of the two transactions, they raise many of the same concerns. As such, the analysis and concerns raised in this affidavit largely overlap with those raised in my earlier affidavit.

support of this transaction, including the lead application and affidavits submitted by Gustavo E. Bamberger, Dennis W. Carlton, and Allan L. Shampine[2] and Robert W. Crandall and Hal J. Singer.[3] As of the current time, Verizon and MCI have failed to disclose the information needed to conduct a full analysis of this significant transaction.

(9) Given my limited access to data at the current time, all my conclusions are necessarily preliminary, and in some instances my object is simply to identify possible concerns. It is my understanding that the merging parties may produce substantial additional information in response to requests from the FCC. I will continue to review and analyze additional data and documents during the course of this proceeding as they become available and will use that information to further supplement my analysis as appropriate.

I.3. Summary of conclusions

(10) It is important to evaluate the Verizon/MCI deal in the context of the proposed transaction between SBC and AT&T. The Verizon/MCI deal is potentially much more damaging to the public interest when evaluated in the context of a SBC/AT&T deal (and vice versa). Verizon and SBC have a history of mutual forbearance, and the mergers would reinforce their incentives to divide the telecommunications market geographically.

(11) The proposed Verizon/MCI transaction raises horizontal competitive concerns at the wholesale level and at the retail level for both residential and business customers. Horizontal issues become even more salient in the context of a SBC/AT&T deal, as mutual forbearance between Verizon and SBC could reduce or eliminate the benefits to consumers from existing competition between AT&T and MCI, SBC and MCI, and Verizon and AT&T. A full investigation is required to determine whether these concerns rise to a level that would violate the FCC's "public interest" standard.

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2 Declaration of Gustavo E. Bamberger, Dennis W. Carlton, and Allan L. Shampine ("Bamberger, Carlton, and Shampine"), filed March 9, 2005.

3 Declaration of Robert W. Crandall and Hal J. Singer ("Crandall/Singer Declaration"), filed March 9, 2005.

(12) The proposed Verizon/MCI transaction also raises significant vertical concerns. The overarching vertical concern is whether this deal essentially reestablishes the pre-Modified Final Judgment (MFJ) environment for traffic originating and terminating within Verizon's region. The transaction would augment Verizon's incentives and opportunities to abuse bottlenecks and market power, with the object of leveraging power between vertically related markets. These concerns also become more salient in the context of a SBC/AT&T deal, as these two highly similar transactions would result in two regional, fully integrated near monopolists, each with little likelihood of challenging the other in its home territory.

(13) The proposed Verizon/MCI transaction potentially harms nascent competition from intermodal alternatives, and creates barriers to the emergence of robust, integrated, end-to-end, facilities-based competition. It does this by increasing the reliance of emerging intermodal competitors on Verizon's networks, thereby allowing Verizon to create artificial barriers to entry and expansion. A SBC/AT&T transaction would also aggravate this concern. These concerns are particularly significant given that SBC and Verizon already control the two largest wireless companies.

(14) In light of the many important and complex concerns raised by this merger, a thorough investigation is required.

II. BACKGROUND ON THE COMPANIES AND THE PROPOSED MERGERS

II.1. Introduction

(15) Since it is important to evaluate the Verizon/MCI and SBC/AT&T deals in tandem, I begin by briefly describing the four companies involved in these two deals. Further, since attorneys for Qwest have retained me to consider the competitive implications of the Verizon/MCI transaction, and Qwest's past involvement in seeking to acquire MCI is well known, I also include a brief description of Qwest.

II.2. Verizon/MCI

(16) Verizon is a successor to the Regional Bell Operating Companies (RBOCs) created after the breakup of AT&T in 1984. It is currently the largest telecom services provider in the United States, with over 145 million access line equivalents, 2004 revenues exceeding $71 billion, and over 210,000 employees. Verizon was created through mergers of three ILECs between 1997 and 1999. Bell Atlantic, which originally operated in six states and Washington, DC, acquired NYNEX in 1997, adding service in six northeastern states.[4] In 1999, Bell Atlantic purchased GTE, which was then the largest non-RBOC local access provider. The combined company was renamed Verizon in 2000. Verizon now operates in 29 states and the District of Columbia.

(17) Verizon offers local, long distance, high-speed Internet, and wireless services to residential customers on a stand-alone basis and in various packages, including "all-distance" voice packages that include local and long-distance services. Verizon also offers a variety of services to

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4 Bell Atlantic originally provided service in New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, and the District of Columbia. NYNEX originally provided service in New York, Massachusetts, Vermont, New Hampshire, Maine, and Rhode Island. See http://www.teletruth.org/History/bbells/bb_who.html.

business customers, including local and long-distance voice and data services. Verizon has had regulatory approval to offer long-distance services throughout its 13-state footprint since 2003, and has long been able to offer services out-of-region (including the former GTE territories). Verizon owns a majority position in the nation's second largest wireless company, which serves more than 43 million customers across the country.[5]

(18) Verizon's primary 13-state footprint includes two-thirds of the top 100 markets in the US.[6] The 12 states in the Verizon footprint and DC account for nearly 23 percent of the total US population[7] as well as three of the five largest metropolitan statistical areas (New York, Philadelphia, and Washington, DC).[8] The region also serves as the home to headquarters of 270 of the Fortune 1000 companies[9] and accounts for more than a quarter of GDP.[10] New York, Pennsylvania, New Jersey, Virginia, and Massachusetts alone account for more than 18 percent of the population,[11] more than 20 percent of GDP,[12] and 237 Fortune 1000 companies. Verizon also serves areas near Los Angeles through the old GTE business, which is obviously a major business center, and also areas in Texas.

(19) MCI was formed in the 1960s, initially providing long-distance service between St. Louis and Chicago through microwave technology. Throughout the 1970s, MCI slowly expanded its presence in the long-distance market, and flourished after the break-up of the Bell System in 1984. By 1990, it had become the nation's second-largest telecommunications company, with a fiber-optic network spanning more than 46,000 miles, and with a portfolio of more than 50 service offerings, including voice, data, and telex transmissions, in more than 150 countries.[13]

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5 See http://www.fortune.com/fortune/fortune500/movie.html.

6 See https://www22.verizon.com/enterprisesolutions/Default/whyverizon.jsp.

7 See Census estimates, July 2004 at http://www.census.gov/statab/www/ranks.html.

8 See http://ftp.fcc.gov/cgb/NumberPortability/msas.html.

9 See http://www.fortune.com/fortune/fortune500/movie.html.

10 U.S. Bureau of Economic Analysis Survey of Current Business, January 2005. Reprinted at http://www.census.gov/statab/www/ranks.html.

11 See *Census estimates, July 2004 at http://www.census.gov/statab/www/ranks.html.*

12 U.S. Bureau of Economic Analysis Survey of Current Business, January 2005. Reprinted at http://www.census.gov/statab/www/ranks.html.

13 See http://news.com.com/MCI+The+end+of+a+telecom+icon/2100-1037_3-5577851.html.

WorldCom acquired MCI for $37 billion in 1998 as part of a series of WorldCom acquisitions (60 in total during the 1990s, including MFS, parent of Internet backbone provider UUNET, Brazil's Embraetel in 1998, wireless messaging firm Skytel in 1999, and the network units of America Online and Compuserve). MCI changed its name to WorldCom in 2000. The company entered bankruptcy in 2002 after restating financials for the previous three years following an internal audit, which found accounting irregularities totaling more than $3 billion. The company emerged from bankruptcy protection in April 2004 and changed its name back to MCI.[14]

(20) MCI was among the leaders in entering local service markets following the Telecommunications Act of 1996. Within a year after passage of the Act, MCI had authority to offer a full range of local services in 30 states, with applications pending in eight additional states, and offered residential and business customers local services in 21 major U.S. cites. MCI has continued to expand its local operations and now is the second largest CLEC nationwide (after AT&T) and in much of Verizon's territory.

(21) Currently, MCI offers business customers a variety of services including local voice service, long-distance voice services (both domestic and international), data services (including frame relay, asynchronous transfer mode, known as ATM, IP virtual private networks, known as IP-VPN, and private lines), and managed services that include network design, maintenance, security, web hosting and desktop implementation. MCI also serves residential customers with local service, long-distance service, and all-distance packages. MCI's "The Neighborhood" program, an unlimited local and long-distance calling plan, has approximately 3.5 million residential and small business customers. MCI continues to offer this service, signing a three-year wholesale agreement with McLeodUSA Inc. after the UNE-P regulations were overturned to continue offering local phone service to consumers.[15] MCI also operates a national and international Internet backbone. In 2004, MCI generated nearly $20.7 billion in revenue and employed approximately 40,000 people.[16]

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14 See http://premium.hoovers.com/subscribe/co/history.xhtml?ID=58340.

15 See, e.g., http://www.phoneplusmag.com/articles/521resell04.html?wts=20050502122113&hc=259&req=MCI+and+neighborhood).

16 See, e.g., http://finance.yahoo.com/q/pr?s=MCIP.

(22) Verizon and Qwest had been engaged in a bidding war for MCI since February 14, 2005, when MCI announced that it had accepted Verizon's $6.75 billion ($20.75 per share) offer in cash and stock over a similar $8 billion ($24.60 per share) cash and stock offer from Qwest. Verizon's initial deal consisted of $4.8 billion in Verizon stock, $488 million in cash, and a $4.50 per share special dividend paid by MCI.[17] The bidding war appears to have ended on May 2, 2005, when Verizon raised its offer to at least $8.5 billion in cash and stock, or approximately $26 per share. While this bid was approximately $1.2 billion less than Qwest's bid at the time, MCI's board recommended approval of this Verizon proposal to its shareholders and Qwest withdrew its bid for MCI, allowing Verizon to proceed with its acquisition.[18]

II.3. SBC/AT&T

(23) Like Verizon, SBC began as an RBOC named Southwestern Bell after the breakup of AT&T in 1984. Its initial footprint consisted of five states. Renamed SBC in 1994, the company acquired other Incumbent Local Exchange Carriers (ILECs), including Pacific Telesis (the parent company of Pacific Bell and Nevada Bell) in 1997 and Southern New England Telecommunications (SNET) in 1998. It subsequently acquired Ameritech in 1999, expanding into five states in the upper Midwest (Illinois, Indiana, Ohio, Michigan, and Wisconsin). SBC currently operates in a 13-state footprint covering about one-third of the U.S. population, including California, Texas, and Illinois.

(24) SBC provides local, long distance, wireless, data, and satellite television (through its agreement with EchoStar) communications services, in addition to telecommunications equipment and directory advertising and publishing.[19] It provides communications services on a stand-alone basis and in various packages to both residential and business customers. SBC has been able to

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17 See http://money.cnn.com/2005/02/14/technology/verizon_mci/ and Yuki Noguchi, "Qwest Reveals Details of Spurned Bid for MCI," *The Washington Post*, February 17, 2005, p. E03.

18 See http://www.washingtonpost.com/wp-dyn/content/article/2005/05/02/AR2005050200254.html and http://www.washingtonpost.com/wp-dyn/content/article/2005/05/02/AR2005050200769.html.

19 See, e.g., http://premium.hoovers.com/subscribe/co/history.xhtml?COID=11379, http://premium.hoovers.com/subscribe/co/overview.xhtml?COID=11379, and http://yahoo.investor.reuters.com/FullDesc.aspx?country=US&ticker=SBC.N.

offer long-distance services throughout its 13-state footprint since 2003. SBC offers traditional long-distance services nationwide, but primarily serves customers in its 13-state area and to selected customers outside its wireline subsidiaries' operating areas. As of the end of calendar year 2004, SBC had 52 million access lines, including 27 million retail customers, 18 million business customers, and seven million wholesale lines. SBC is the second-largest local phone provider in the United States behind Verizon, with nearly $41 billion in revenue and more than 160,000 employees in 2004. SBC also owns a majority position in Cingular Wireless, the nation's largest wireless company, serving 50 million customers across the country.

(25) Within SBC's footprint are five of the top 10 MSAs,[20] and 14 of the 20 most populous cities.[21] Altogether, the headquarters of 493 Fortune 1000 companies,[22] including all of the top seven,[23] are in the SBC region. Approximately 43 percent of the total population lives in SBC states, and those states generate approximately 43 percent of US GDP.[24]

(26) AT&T, once part of the Bell System, historically provided long-distance services, but has expanded into certain local services. It operates 55,543 route miles of long-haul backbone fiber optic cable plus 21,655 additional route miles of local metropolitan fiber. Business services, including long distance, local phone, and data services, represent nearly three-quarters of its revenue. Its long-distance services include, among others, national and international calling, toll-free calling, and virtual private networks. AT&T provides local and data service in major metropolitan areas. Its data services include complete high-speed local area networks, Voice over Internet Protocol (VoIP), and dial-up.

(27) While AT&T claims that it is no longer soliciting new residential customers, AT&T still has a large residential customer base. As of the end of the first quarter of 2005, AT&T had more than 22.7 million stand-alone and bundled long-distance customers and 3.8 million local customers.

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20 See http://ftp.fcc.gov/cgb/NumberPortability/msas.html.

21 See 2003 US Census Bureau estimates. Reprinted at http://www.infoplease.com/ipa/A0763098.html.

22 Ibid.

23 See http://www.usatoday.com/money/companies/2004-03-22-fortune-500-list_x.htm

24 See Census estimates, July 2004 at http://www.census.gov/statab/www/ranks.html and U.S. Bureau of Economic Analysis Survey of Current Business, January 2005. Reprinted at http://www.census.gov/statab/www/ranks.html.

AT&T also provided DSL or dial-up data services to 1.2 million residential customers, and VoIP to more than 50,000.[25] AT&T generated more than $30.5 billion in revenue in 2004, employing more than 47,000 people.[26]

(28) On January 30, 2005, SBC announced an agreement to acquire AT&T for approximately $16 billion, or approximately $19.71 per share of AT&T common stock. Approximately $15 billion (or $18.41/share) of the payment would be in the form of SBC stock, plus a $1.30 per share special dividend from AT&T. AT&T would pay the special dividend portion, which is separate from its annual dividend of $0.95 per share, directly to its shareholders just before the deal closes.[27] If approved by shareholders and the FCC, the deal will create the largest telecommunications carrier in the United States, at least until, and if, Verizon completes its acquisition of MCI.

II.4. Qwest

(29) The Qwest family of companies provides local telecommunications services, long-distance services, and high-speed data, Internet, and video services to residential and business customers within a 14 state region in the western United States that is, for the most part, sparsely populated with few corporate headquarters. The Qwest family of companies also provides long-distance services and broadband data and voice communications outside of its local service area. Qwest operates a global broadband network, designed with the latest advances in network technology for speed and efficiency, spanning more than 156,000 route-miles, excluding Qwest's local network within its 14-state footprint. Unlike other RBOCs, Qwest does not have wireless assets and only re-sells limited wireless services through an agreement with Sprint. Qwest is the smallest of the RBOCs, with 2004 revenue of $13.8 billion and 41,000 employees.

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25 See http://yahoo.investor.reuters.com/FullDesc.aspx?target=/stocks/quickinfo/companyprofile/fulldescription&ticker=T.

26 See http://premium.hoovers.com/subscribe/co/factsheet.xhtml?ID=10103.

27 See, e.g., http://www.businessweek.com/magazine/content/05_09/b3922049_mz011.htm and http://www.findarticles.com/p/articles/mi_zd2970/is_200501/ai_n9475723.

(30) Since acquiring US WEST in 2000, Qwest has distinguished itself from SBC and Verizon by competing outside its regional local service footprint and by taking significant steps to facilitate competition inside its region. Qwest has introduced innovative wholesale products and entered into line-sharing agreements that have provided increased access to its facilities by competitive CLECs. The company was the first, and until recently was the only, RBOC that provided stand-alone DSL. Qwest has fostered the deployment of VoIP services by not charging access fees pursuant to the FCC's ISP exemption on any VoIP-originated calls to its local service subscribers.

(31) It is appropriate to ask whether, for the purpose of these proceedings, Qwest should be regarded as a "complaining competitor." Some would argue that the antitrust authorities should treat the complaint of competitors with skepticism; if a transaction is truly anticompetitive, competitors would benefit from the higher prices charged by the merging parties, leaving them no reason to complain. According to this view, only transactions that enable the merging parties to offer cheaper or better products, to the benefit of consumers, would attract complaints by competitors.

(32) This argument is valid in some circumstances, but not in others. If an anticompetitive merger results in higher prices by virtue of reducing competition between the merging parties, competitors would indeed have no reason to complain. However, if an anticompetitive merger results in higher prices by virtue of raising rivals' costs and creating other artificial obstacles to their efficient operation, competitors would have every reason to complain. In this instance, Qwest is an actual and potential customer of Verizon, MCI, SBC, and AT&T and is justifiably concerned that the transactions will enhance the ability of Verizon/MCI and SBC/AT&T to artificially undermine Qwest's extensive out-of-region competitive activities. I discuss the reasons for this at length in Sections V through VII.

III. IT IS IMPORTANT TO EVALUATE THE VERIZON/MCI AND SBC/AT&T TRANSACTIONS TOGETHER

(33) The proposed Verizon/MCI and SBC/AT&T transactions raise similar competitive issues and are inherently related. A decision on one deal potentially sets a strong precedent for the other. Since MCI and AT&T on the one hand, and Verizon and SBC on the other, are broadly similar, the Verizon/MCI deal and an SBC/AT&T deal similarly raise horizontal concentration within the same service markets and result in similar vertical combinations. Differences appear to be largely a matter of degree rather than of kind.

(34) The competitive effects of these proposed mergers are not separable. On the contrary, their effects are necessarily interdependent, as the mergers if allowed would reshape the competitive landscape throughout the industry. Of greatest concern is the likelihood that the two integrated giants would fail to compete with each other meaningfully in any venue, instead engaging in "détente," or what economists call "mutual forbearance."

(35) My concern that Verizon and SBC will engage in a strategy of mutual forbearance stems in large part from the fact that these two entities have a history of avoiding competition with each other. *Verizon and SBC have taken part in little out-of-region competition.*[28] For example, there are a number of areas where Verizon and SBC's footprints lie in close proximity to each other.[29] In many of these regions, available business opportunities and existing infrastructure would appear to provide these companies with strong incentives to compete, yet they have largely stayed out of each others' territories. For example, in parts of California, including Los Angeles, there is little cross-boundary competition despite the fact that Verizon's and SBC's footprints come into contact. Similarly, in southwestern Connecticut and New York, where Verizon and SBC have

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28 This is in contrast to Qwest. Given the relatively small size of Qwest's in-region business opportunities compared to SBC and Verizon, Qwest has strong incentives to compete out of region.

29 See letter and attachments from Ann Berkowitz, Associate Director Federal Regulatory Advocacy for Verizon to Marlene H. Dortch, Secretary, Federal Communications Commission, April 13, 2005.

significant local exchange assets in close proximity, there also appears to be little meaningful cross-boundary competition, even though, for example, the corridor from southwestern Connecticut through New York City into New Jersey is the nation's largest business center, with many business headquarters.

(36) This aversion to out-of-region competition is inconsistent with the companies' previous claims that past mergers would lead them to become forceful nationwide competitors. The FCC has explicitly recognized this issue in the past and has attempted to force Verizon and SBC to engage in out-of-region competition. For example, as a condition for its acquisition of GTE, Bell Atlantic was required to spend $500 million toward entering new markets—of which half had to be spent on facilities-based service—or to serve at least 250,000 customer lines within three years, or face fines of up to $750 million.[30] Similarly, as a condition for acquiring Ameritech, the FCC required SBC to enter thirty markets within thirty months of closing the merger, or face fines of up to $40 million for each market—potentially $1.2 billion across all markets.[31] These agreements appear to have been largely unsuccessful in forcing SBC and Verizon to engage in meaningful out-of-region competition.

(37) These concerns are further reinforced by the fact that SBC and Verizon have sought, through regulatory and legal channels, conditions that hinder rather than assist local competition. They are willing to sacrifice their ability to compete with other ILECs (including each other) out of region for regulatory protection within region. Far from taking advantage of opportunities, such as UNE-P, to expand outside their regions, SBC and Verizon have systematically opposed such measures in regulatory and legal settings.

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30 Federal Communications Commission, *Memorandum Opinion and Order.* CC Docket No. 98-184, In the Applications of GTE Corporation and Bell Atlantic Corporation Inc. For Consent to Transfer Control of Domestic and International Sections 214 and 310 Authorizations and Application to Transfer Control of a Submarine Cable Landing Station, June 16, 2000.

31 Federal Communications Commission, *Memorandum Opinion and Order.* CC Docket No. 98-141, In the Applications of Ameritech Corporation and SBC Communications Inc. For Consent to Transfer Control of Corporations Holding Commission Licenses and Lines, October 8, 1999.

(38) It is therefore critical for the Commission and antitrust authorities to undertake a thorough examination of the extent to which Verizon and SBC compete with each other in each other's territories for various lines of business. Without a comprehensive examination of this issue, the competitive consequences of these transactions cannot be fully assessed.

(39) The propensity for SBC and Verizon to mutually forebear has significant implications in the context of competition between MCI and AT&T. MCI and AT&T currently compete vigorously with each other. But as arms of Verizon and SBC, they likely would not. The key question is whether it is in the public interest to place these important economic resources in the hands of two companies (Verizon and SBC) who have historically been inclined to respect each other's geographic markets.

(40) The Commission should be particularly concerned about mutual forbearance in the local wholesale market, as MCI and AT&T to date have been the primary sources of alternative access in competition with Verizon and SBC. The proposed mergers raise serious concerns insofar as Verizon and MCI are each capturing one of their own main wholesale rivals. But this reduction in competition would be exacerbated even further if SBC and Verizon stop the current competition of MCI and AT&T in the other's region. In that event both of the main wholesale competitors to Verizon and SBC would be eliminated as aggressive competitors in the two-thirds of the country served by these firms.

(41) There are several reasons to think that the proposed mergers would, by promoting mutual forbearance, cause the acquired entities (MCI and AT&T) to compete less vigorously with each other. First, as mentioned above, the acquiring parents (Verizon and SBC) have a history of mutual forbearance. They have strong stakes in maintaining the current, stable market configuration, and this requires them to avoid mutual provocation. Second, the acquired entities would inherit from their parents a natural geographical principle for dividing the market. Currently, MCI and AT&T have no such natural principle. Third, as things currently stand, MCI and AT&T can, in response to competitive forays, punish each other only as competitors (that is, by trying to take business away from each other through more aggressive pricing). After the merger, Verizon/MCI would also be able to punish SBC's AT&T affiliate in other potentially less costly ways, such as denying it business in the wholesale long distance transport market, or by denying it attractive access and interconnection arrangements. SBC/AT&T would be able to punish Verizon's MCI affiliate in the same way. Fourth, as ILECs, SBC may be better positioned

than AT&T to monitor MCI's competitive activity, and Verizon may be better positioned than MCI to monitor AT&T's competitive activity. The Merger Guidelines explicitly recognize these last two factors – enhanced ability to punish, and enhanced ability to monitor – as potentially contributing to the likelihood of collusion.[32]

(42) In pointing out the incentives for mutual forbearance between Verizon/MCI and SBC/AT&T, I do not mean to suggest that Verizon's AT&T affiliate will abandon existing customers in SBC's territory, or that SBC's MCI affiliate will abandon customers in Verizon's territory. Rather, the concern is that they will stop vigorously seeking new customers in each other's territories, and perhaps gradually cede old customers. By way of analogy, when MCI and AT&T shifted their focus away from the residential long distance marketplace, they expressed a willingness to serve existing customers, but did little to defend this business and, as a result, experienced erosion of market share (for example, in the last six months of 2004, MCI experienced a [**redacted**] in the number of its long distance lines).[33] As Verizon recognizes, this substantially attenuated AT&T's and MCI's competitive significance for residential customers. Should Verizon's MCI affiliate adopt this posture more broadly in SBC's territory, and SBC's AT&T affiliate adopt this posture more broadly in Verizon's territory, competition would suffer.

(43) The mergers will increase SBC's and Verizon's incentives and inclination to practice mutual forbearance more generally. For example, based on their own statements, the Verizon/MCI and SBC/AT&T entities will be highly symmetrical.[34] Symmetry, combined with regional

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[32] E.g., see Horizontal Merger Guidelines, §2.1.

[33] See Declaration of Wayne Huyard, ¶2.

[34] E.g., see Robert A. Saunders, *Critical Implications of the Proposed Qwest MCI Merger: An Industry White Paper* (The Eastern Management Group, 2005) at p. 2, fn. 1:

> "[T]he two companies (SBC-AT&T and Verizon-MCI) would be almost mirror images of one another with similar revenues, access lines and payrolls."

This paper was commissioned by Verizon.

See also, Legg Mason, Qwest Communications Int'l., Inc. NYSE:Q, Reports Indicated Continued Q/MCI Discussions, April 19, 2005, p.1:

> "Finally we reiterate our view that the enterprise sector is more sustainable should VZ prevail [as the acquirer of MCI] as VZ/MCI and SBC/T would have very similar business mixes and thus more aligned interests in the marketplace..."

(Parentheses added.)

specialization, creates a mutuality of interest, as well as mutual threat and a natural basis for dividing the market, that are both hard to overlook and conducive to forbearance.[35]

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[35] E.g., see Merger Guidelines, §2.11:

> "[M]arket conditions may be conducive to or hinder reaching terms of coordination. For example, reaching terms of coordination may be facilitated by product or firm homogeneity..."

IV. HORIZONTAL OVERLAPS

IV.1. A framework for analysis

(44) While the merging parties have characterized this transaction as combining businesses that are largely complementary in nature,[36] it has significant horizontal as well as vertical aspects. In order to separate the horizontal issues from vertical issues, I approach the horizontal concerns as follows. Verizon and MCI operate in many input markets and many output markets, differentiated by both geography and product.[37] One can imagine, in a completely unintegrated world, a separate firm operating each of these pieces, e.g., Verizon Loops, Verizon Transport, Verizon Switching, and so forth (in each instance identified with an appropriate geographic area), and similarly for MCI. These would be wholesale companies. In this unintegrated world, there would also be a retail "aggregator" of these inputs for each identifiable consumer market (e.g., Verizon residential service for a geographic area). Currently, all these Verizon wholesale and retail "firms" are owned and operated by a single entity, and similarly for the MCI "firms." However, only the overlaps in each of these segments are directly relevant to a traditional analysis of horizontal concentration.

(45) The actual state of integration between these component firms into single entities—Verizon and MCI—is also relevant to an analysis of the horizontal concentrating effects of the merger, insofar is it relates to barriers to entry. For example, high concentration in the retail aggregator functionality may be particularly problematic if market power therein is sustained by control of integrated facilities. However, I take up these types of issues in the next section, under the heading of vertical concerns.

36 E.g., see *Bamberger, Carlton, and Shampine*, at p. 3.

37 In using the term "market," I am merely using it in the colloquial sense and am not making any judgments about relevant antitrust markets at the current time.

IV.2. Concentrating effects at the wholesale level

IV.2.1. Local facilities

(46) By virtue of its historical monopoly position as an ILEC, Verizon is the dominant provider of the wholesale inputs required by all telecommunications firms for providing access, including loops, transport, and switches in its region.

(47) As a general matter, MCI has been a leader among competitive local exchange carriers (CLECs) in providing alternative facilities for these inputs and is generally second only to AT&T. Thus, according to New Paradigm Resources Group, in terms of voice switches, MCI is number two with 112 (to AT&T's 150).[38] In terms of data switches, MCI is seventh with 58, while AT&T is the market leader with 150.[39] In terms of total competitive access lines, MCI with six million is second to AT&T's 8.5 million.[40] MCI is also second to AT&T in terms of CLEC revenue ($7.9 billion to $8.5 billion).[41]

(48) In evaluating this transaction, it is important to keep in mind that with respect to the above metrics, the third largest CLEC generally lags significantly behind both MCI and AT&T. For example, the next largest CLEC in terms of voice switches is McLeod with only 44. McLeod is also the third largest in terms of competitive access lines with one million (less than one-fifth the size of MCI). Assuming both transactions are approved, the competitive landscape will be significantly altered by the newly created Verizon/MCI and SBC/AT&T entities.

(49) The preceding statistics are, of course, aggregated at the national level. An analysis involving overlaps between SBC and AT&T must be undertaken at a much more granular level. Indeed, the FCC in the latest UNE rulings decided that the relevant market, in terms of transport, is

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38 New Paradigm Resources Group, Table 16, pp. 4-5.

39 Ibid., Table 19.

40 Ibid., Table 20.

41 Ibid., Table 22.

"route by route."[42] In terms of loops, the FCC has most recently held that the relevant market is the "wire center service area."[43] MCI has supported even narrower definitions of the relevant market in the past, arguing that, in terms of loops, the relevant market is a single building, or perhaps an even smaller unit like a floor or even a customer (on the grounds that, just because a building is lit, it does not follow that all floors are lit or are easily lit).[44] The market definition should be revisited and evaluated in the context of the specific competitive issues raised by these mergers.[45]

(50) This is in contrast to the aggregate CLEC counts undertaken by Bamberger, Carlton, and Shampine to demonstrate CLEC competition.[46] In addition to conducting this analysis at the

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42 E.g., see UNE Remand Order, February 4, 2005 at ¶¶78—80. The FCC noted that even if a connection between two wire centers took place through a third intermediate wire center or switch, the relevant market was still the two end points (UNE Remand Order at ¶80).

43 UNE Remand Order at ¶¶155-161.

44 E.g., see Declaration of Peter H. Reynolds, In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers at 4-5:

> "WorldCom's preference is to serve customers 'on-net,' i.e., by provisioning circuits to the customer premises using WorldCom local network facilities...To support this strategy, WorldCom has constructed fiber rings in several cities and, in some cases, has extended its fiber rings to large office buildings, carrier hotels, interexchange carrier points of presence, and other large customer buildings. However, WorldCom's local fiber network only reaches approximately [proprietary] buildings. And, even when a building is 'on-net,' WorldCom is in some cases restricted to serving only particular floors or particular customers within the building."

45 As noted in the Merger Guidelines, for purposes of antitrust analysis, market definition focuses solely on demand-substitution factors, i.e., the choices facing consumers (see Merger Guidelines, §1.0). The choices facing wholesale customers in terms of the facilities used to serve final customers appear quite granular.

46 See Bamberger, Carlton, and Shampine, Tables 1 and 2. See also Declaration of Quintin Lew and Ronald H. Lataille at ¶15. Lew and Lataille attempt a somewhat more granular analysis purporting to show the number of competing carriers in various Verizon wire centers, as well as "wire center clusters," where Verizon and MCI overlap. (Lew and Lataille at Exhibits 10A-10C.) Also relevant is the extent to which the same competing carriers are in nearby wirecenters. If there are not overlapping CLECs in neighboring wirecenters, the contracting expenses for a wholesaler wishing to bypass the ILEC facilities become too great. This should be a focus of staff's investigation.

Other information provided in their affidavit appears to be of less value for evaluating facilities' competition. For example, Lew and Lataille maintain that there is significant competitive fiber in Verizon service areas. (Lew and Lataillle at ¶17, See also Declaration of Jonathan P. Powell and Stephen M. Owens.) However, this says nothing about the extent of MCI's deployment, nor does it say anything about the nature of the competitive overlap between Verizon and MCI. Also relevant in such an analysis would be the nature and proper level of geographic granularity, the investigation should encompass all of Verizon's ILEC territories and should not just be limited to certain former Bell territories as may also have been done in the Bamberger et. al. report and elsewhere by Verizon.[47]

(51) Given MCI's role as a leading owner of local facilities, it is entirely possible that a granular analysis will identify geographic pockets in which the concentrating effects of the merger are even more problematic than the national statistics would suggest. There may, for example, be important instances of "merger to monopoly."

(52) Another problem with the Bamberger, Carlton, and Shampine (as well as Crandall and Sider's) analysis of horizontal effects is that they fail to recognize the importance to many CLECs of originating and terminating MCI's traffic. With MCI's announced plans to migrate this traffic to Verizon's network in-region, the transaction will further decrease the market share and financial strength of other carriers.

(53) As previously noted, my concerns are particularly heightened by the fact that MCI is also a leading owner of local facilities, and along with AT&T, one of the two companies best positioned to build further bypass facilities. To the extent SBC and Verizon engage in mutual forbearance, the mergers will remove the competitive discipline offered by both AT&T and MCI.

(54) Anticompetitive effects are not limited to areas where there are overlapping facilities. Given their size and traffic volumes, MCI and AT&T have been able to negotiate discounted access rates on routes where they do not currently have fiber. They also play an important role as aggregators of their own and other CLEC input requirements, allowing them to arbitrage SBC and Verizon access prices in some circumstances and resell access to smaller carriers at lower access prices than they otherwise would have to pay. The loss of MCI and AT&T as

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extent of fiber deployment by AT&T given the mutual forbearance concerns stemming from the SBC/AT&T transaction I discussed above. Further, at ¶24 they discuss buildings lit by MCI and argue there is competition other than Verizon by pointing out that there are wire centers in the same general area with competitive fiber. However, the fact that there are fiber-based collocations at central offices in the same general area is a far cry from there being competitive loops to buildings where MCI and Verizon overlap

47 E.g., see Bamberger, Carlton and Shampine at fn. 81, which indicates they considered possible CLEC overlaps only within the former Bell Atlantic's 13-state region. Verizon has ILEC operations in 29 states and the District of Columbia.

"aggregators" for other CLECs will further weaken the competitive position of other local competitors. Here too, mutual forbearance by Verizon and SBC from reselling each other's access would exacerbate these effects.

(55) It is important to consider the potential effects of the merger on future facilities, as well as current facilities. MCI and its predecessors have previously pointed out that the high sunk cost of constructing new facilities is a serious barrier to the growth of local competition.[48] Nevertheless, MCI and AT&T appear to be the most likely, best-situated candidates for deploying such facilities. These two proposed mergers therefore remove the most likely sources of new competitive capacity in these markets.

(56) While MCI may not have a large share of all local facilities nationwide, it remains among the leading alternatives to Verizon and SBC (especially in the wake of an SBC/AT&T deal). Based on New Paradigm's report, MCI accounts for nine percent of all CLEC voice switches nationwide, second only to AT&T's 12 percent. Since Verizon and SBC have shown no inclination to voluntarily engage in aggressive wholesaling, the removal of this independent capacity from the wholesale market would be especially problematic.

(57) Whenever a transaction makes a very large competitor even larger, it raises significant competitive concerns, even if the change in its share would be relatively small. This view is in keeping with the Merger Guidelines, which acknowledge heightened concerns in such situations.[49]

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48 E.g., see Comments of WorldCom, Inc., In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers at pp. 19-21.

49 E.g., see Merger Guidelines, §1.5:

> "[M]arket concentration is a function of the number of firms in a market and their respective shares. As an aid to the interpretation of market data, the Agency will use the Herfindahl-Hirschman Index ("HHI") of market concentration. The HHI is calculated by summing the squares of the individual market shares of all the participants. Unlike the four-firm concentration ratio, the HHI reflects both the distribution of the market hares of the top four firms and the composition of the market outside the top four firms. It also gives proportionately greater weight to the market share of the larger firms, in accord with their relative importance in competitive interactions..."

(Emphasis added.)

(58) Cable and wireless may provide viable alternatives to some consumers, in some settings, for some geographic markets. Their facilities are not considered in the preceding statistics on wholesale capacity. However, their competitive significance in the context of this merger must be evaluated on a market-by-market basis. I discuss this in the context of the retail markets below.

IV.2.2. Long-distance transport facilities

(59) The mergers will also substantially increase the concentration of capacity for long-distance transport, and reduce the intensity of competition in related wholesale markets. This effect comes from two sources. First, Verizon has long-distance transport capacity of its own, especially *within-region*, as well as nationwide capacity that it controls through leases from Level 3 and other carriers.[50] Its combined share with MCI may be substantial, particularly along certain routes, although probably less so than AT&T in the SBC region. On some secondary and tertiary routes to smaller cities, Verizon and MCI may be the only firms with transport facilities. The aggregated nationwide analysis of Bamberger, Carlton, and Shampine fails to address these overlaps.

(60) Second, if SBC acquires AT&T and then engages in mutual forbearance with Verizon, then, together, the deals may have effects similar to those that would follow from combining the long-distance transport facilities of Verizon, MCI, SBC, and AT&T. To the extent there are geographic areas in which all four firms have long-distance transport facilities, the competitive effects of the deals are potentially similar to a merging all four parties. In areas where either Verizon or SBC has long-distance transport facilities (but not both), the competitive effects of the deals are potentially similar to merging three parties. In general, the deals may remove or at least reduce the benefits to consumers that flow from competition between MCI and AT&T.

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50 See, for example, http://www.internetnews.com/infra/article.php/1579151.

(61) Thus, in light of the potential for mutual forbearance, the horizontal consequences of the Verizon/MCI deal and a SBC/AT&T transaction in wholesale long-distance transport could be more severe than a simple horizontal merger between MCI and AT&T.

(62) Even with these two mergers, significant independent long-distance transport capacity would remain. However, it is not clear that this would be sufficient to maintain the current level of competitive intensity. Indeed, the remaining independent facilities-based long-distance firms would be heavily dependent on Verizon and SBC for interconnections for access, as well as long-distance traffic, so Verizon and SBC would be in a much stronger position with respect to their ability to manipulate this market to their advantage. I return to this issue below under the heading of vertical concerns.

(63) Potential entry (that is, the addition of new long-distance transport facilities by independent companies) may mitigate some of these concerns. However, facilities-based competition in long distance grew slowly over the course of a decade or more following the MFJ, as companies developed from resellers into facilities-based competitors. Replicating this under the best conditions would take time.

(64) Moreover, the growth of facilities-based long-distance competition occurred in a world where the predecessors of Verizon and SBC were not permitted to sell long-distance services. It is not at all clear that the same phenomenon could occur with these firms dominating long-distance markets (I discuss related issues below under the heading of vertical concerns).

IV.3. Concentrating effects at the retail level

IV.3.1. Introduction

(65) Verizon and MCI are direct horizontal competitors for voice and data services in the consumer and business marketplaces. In many instances they may be the most notable competitors for significant groups of customers. As with any horizontal transaction, it is important to examine these competitive overlaps thoroughly. Since the overlaps differ from service to service, place to place, and by customer classification, it is necessary to conduct this analysis on a granular level

under the Merger Guidelines. The data needed to do so are not yet available, and neither Bamberger, Carlton, and Shampine nor Crandall and Singer appear to have conducted such an analysis. Indeed, they concede they have not.[51]

(66) In terms of evaluating service overlaps at the retail level, it is difficult at the current time, based on the data immediately available, to provide a rigorous application of the approach to market definition outlined in the Merger Guidelines.[52] Nevertheless, in the context of merger reviews, the Commission and Antitrust Division have distinguished between services provided for residential customers and services provided to business customers. Further, within the business category, it is customary to distinguish between small and medium business customers (SMB), and enterprise customers (enterprise). Enterprise customers consist of the largest business customers as well as many government and institutional customers. Each of these three groups generally has very different telecommunications needs. I first discuss competitive issues among business customers. I then turn to a discussion of residential customers.

IV.3.2. Business customers

IV.3.2.1. Local business telecommunications services

(67) Given the ILECs' historical dominance of local services and the continuing need for interconnection with an ILEC's network to provide such services, it is not surprising that Verizon's share of local business service is high while MCI's is low.[53] For example, according to

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51 Bamberger, Carlton and Shampine at 28, fn. 64.

52 U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines, Issued April 2, 1992, Revised April 8, 1997. Under the Horizontal Merger Guidelines, a market has both a geographic and product dimension. Markets are defined as a group of products, and a geographic area, in which a firm that is the sole provider of the product in the geographic are would profitably impose a small but significant non-transitory increase in price (SSNIP), holding constant the terms of sale of all other products. (See Horizontal Merger Guidelines, §1.0.) If, in response to the SSNIP, a sufficient number of consumers would substitute other products to make the price increase unprofitable, then the assumed market is expanded to include the "next best" substitutes until the test is satisfied.

53 Bernstein Research, "U.S. Telecom: Enterprise Market to Drive Half of the Industry's Growth," January 21, 2005.

data from TNS Telecoms, Verizon's share of total local business lines in Verizon's total exchange territory across the country is [**redacted**]. MCI is the [**redacted**] CLEC within Verizon's overall footprint (AT&T is [**redacted**]), maintaining a [**redacted**] share.[54] Further, an ILEC footprint, in many cases, for many services and customers, is likely to be considerably broader than the relevant geographic market in which these horizontal overlaps should be evaluated. There are likely to be many cases where MCI holds the second or third position in terms of local services. MCI is an important head-to-head competitor with Verizon in this space, and, consistent with the Merger Guidelines, Verizon's high share implies that this overlap should raise potential competitive concerns.[55] MCI's competitive significance is magnified by the fact that it has a highly established brand name that few competitors would be able to replicate, and it is in a stronger financial position than most other CLECs.

(68) The same factors also imply that simple divestiture may not be an acceptable remedy. A worthy acquirer would have to have the competitive strength to maintain MCI's competitive position.

(69) Since AT&T is generally the leader among CLECs, a SBC/AT&T deal would magnify these concerns. As a consequence of mutual forbearance, SBC may have diminished incentives to operate AT&T in competition with Verizon after the mergers, especially in the Verizon region. Thus, in many instances the mergers may eliminate effective competition from both the first and second alternatives to Verizon.

(70) While MCI and AT&T have had limited success to date in local business services, their future success depends on the technological, regulatory, and legal environments, all of which are changeable. Conditions may arise that are more conducive to local competition. If so, MCI and AT&T are the most natural competitors; the Verizon/MCI and SBC/AT&T mergers would eliminate them.

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54 In terms of total local business revenue, the picture is similar, with Verizon having a share of 67 percent in the Verizon footprint, AT&T second with an eight percent share, and MCI fourth with a two percent share

55 Based on the shares of the two merging parties alone, the market would be highly concentrated and the change in the HHI indicates the merger is "likely to create or enhance market power or facilitate its exercise." (See Merger Guidelines, §1.51.)

(71) The Commission should apply the Merger Guidelines' criteria to evaluate whether intermodal alternatives currently provide effective constraints at the retail level for business consumers of local services sufficient to constrain a post-merger exercise of market power. There is a need to study seriously and systematically the extent and impact of intermodal alternatives on local competition in different geographic areas.

(72) It is important to evaluate claims of actual intermodal competition through careful consideration of quantitative evidence concerning systemic competitive activity, of the type usually required in merger inquiries, and to evaluate this evidence by applying the usual competitive standards used in merger work. It is not enough that competition is high by the historical standards of a traditionally monopolized industry. Under the Merger Guidelines, this analysis must be performed at a sufficiently granular level, as the relevant geographic markets are potentially quite small. AT&T has argued for such an analysis in other contexts.

(73) The Commission should use the Merger Guidelines' criteria to evaluate whether cable service is a viable alternative for business customers and sufficient to constrain the post-merger exercise of market power. It is critical that this analysis take place on a market-by-market basis since there may be wide variation. Cable facilities may not pass through many downtown areas where many business customers are located. Indeed, data from the FCC indicates that on a national basis there is little deployment of cable for advanced business services. In particular, it appears that cable accounts for only 2.8 percent of all high-speed lines with at least 200 kbps in at least one direction, and 2.7 percent of all high-speed lines with at least 200 kbps in both directions (the statistics are based on Tables 1 through 4 of *High Speed Services for Internet Access*, June 2004, after eliminating residential and small business lines from the totals). Further, bandwidth limits and security concerns reduce the appeal of cable alternatives for many business customers.

(74) While the merging parties place considerable emphasis on the growth of wireless calling, they do not make a distinction between the business and consumer segments.[56] The Commission should evaluate whether broadband wireless services (both fixed and mobile) on a market-by-market basis are sufficiently advanced to provide a meaningful alternative for many business

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[56] E.g., see Crandall/Singer at p. 3.

customers.[57] Data from the FCC indicates that on a national basis there is little deployment of broadband advanced wireless services. Satellite and fixed wireless comprised 1.3 percent of all high-speed lines with 200 kbps in at least one direction, and 0.4 percent of all high-speed lines with at least 200 kbps in both directions. Eliminating residential and small business lines from these totals results in satellite and fixed wireless penetration of 1.44 percent in one direction and 0.92 percent in both directions. (These statistics are based on Tables 1 through 4 of *High Speed Services for Internet Access*, June 2004.)

(75) Also, it is important to keep in mind that Verizon and SBC are, by far, the two largest providers of wireless services. Currently, their desire to become all-service providers for enterprises that are customers of MCI and AT&T provides Verizon and SBC with strong incentives to develop broadband advanced wireless capabilities. After acquiring the targeted enterprise business through the proposed acquisitions, their incentives to develop these alternatives may be significantly attenuated. Thus, the lack of competitive overlap in wireless does not mean that there are no wireless competitive concerns.

(76) The impact of VoIP in the business segment is as yet unclear. Since VoIP is an Internet service, some customers appear to have serious concerns about security. Further, VoIP services may still be highly reliant on the incumbent local exchange network for UNEs or special access controlled by Verizon. It is noteworthy that MCI was the first to market with a network-based VoIP product, called MCI Advantage™, in 2001, and is a market leader in providing VoIP services to business customers. In 2003 and 2004, MCI planned significant expansions in its VoIP services, including a partnership with Time-Warner Cable to provide nationwide residential VoIP service, a planned global expansion of VoIP services, and, internally, migrating its own voice traffic to its IP network.[58] There is every reason to believe that MCI would continue to aggressively expand its VoIP service offering absent the proposed merger with Verizon, thus providing additional competitive options to residential and business consumers.

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57 Crandall/Singer provide evidence that the profitability of telecom sales to enterprise customers is declining, which they attribute to wireless and broadband. However, they provide no direct evidence that this is the cause. See Crandall/Singer at pp. 31-32.

58 See, e.g., http://www.networkworld.com/newsletters/isp/2004/0329isp2.html, http://consumer.mci.com/cablevoice/timeWarnerPR.jsp, and http://consumer.mci.com/cablevoice/faqs.jsp.

IV.3.2.2. Long-distance services

(77) Within the SMB segment in Verizon's region, according to data from TNS Telecoms, Verizon's current share of toll revenue among small businesses in the Verizon footprint is [**redacted**], while MCI's share is [**redacted**] and AT&T's is [**redacted**], with no other provider having over a [**redacted**] share. The firms involved in the potential Verizon/MCI and SBC/AT&T mergers are clearly the three largest providers of such services in the Verizon footprint, and place the region in the highly concentrated range according to the standards set forth in the Horizontal Merger Guidelines. Based on these market shares, the merger must be seen as likely to create or enhance market power, or facilitate its exercise, according to the standards set forth in the Merger Guidelines. Once again, the likelihood of mutual forbearance heightens this concern, as the Verizon/MCI and SBC/AT&T mergers may also eliminate or at least attenuate the existing competition between MCI and AT&T.

(78) Historically, the IXCs have been the leading providers of long-distance services for enterprise customers. Verizon has a much smaller share of the market. However, the proposed merger still raises competitive concerns in this venue, for three reasons.

(79) First, Verizon is, at a minimum, a significant potential competitor for many enterprise business customers in its footprint, particularly inasmuch as it evidently has designs on this market. As noted above, Verizon's footprint serves as home to 270 of the Fortune 1000 companies and accounts for more than a quarter of GDP. Thus, Verizon appears well suited to serve a significant portion of the business enterprise market without even leaving its footprint.

(80) Second, it may be appropriate to analyze the enterprise businesses at a granular level, differentiating between different types of enterprises. If different types of customers have specialized service needs (e.g., banks vs. airlines), there may be classes of customers for whom the merging parties are particularly well suited.[59]

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[59] E.g., Verizon offers specific telecommunications "Solutions by Industry." (See http://www22.verizon.com/enterprisesolutions/Default/Index.jsp.)

(81) Third, it is again important to acknowledge that, in combination with the proposed SBC/AT&T transaction, the merger may remove, or at least reduce, the benefits to consumers flowing from MCI's competition with AT&T. That is, mutual forbearance between SBC and Verizon after the mergers could work to the detriment of enterprise customers.

IV.3.3. Residential customers

(82) Though the removal of the MFJ's line-of-business restrictions have made traditional distinctions between local and long-distance service less relevant at the retail level, it is difficult to describe MCI's position without differentiating between local, long distance, and all distance subscribers. To my knowledge, MCI still has a sizable number of residential long-distance subscribers and, indeed, continues to sign up new residential subscribers. In its region, Verizon has the lion's share of local and all-distance residential subscribers, and is growing rapidly in long distance primarily by migrating customers to all-distance services. For long-distance subscribers, the post-merger shares of the merged entity appear to be quite high, which suggests that the transaction may raise standard horizontal concerns.

(83) The issue of horizontal concentration is, however, not quite so standard. MCI claims that it no longer actively solicits local residential customers, and the retail long-distance segment itself may disappear as it is absorbed into the all-distance segment. Even so, the transaction does raise at least two concerns about horizontal competitive effects in markets for residential retail service.

(84) First, MCI's many residual long-distance subscribers will likely fare better if Verizon is forced to compete for their business, inducing them to switch through attractive offerings, instead of acquiring their business by virtue of taking over MCI. Second, MCI's ability to compete effectively for residential subscribers is a function of the technological, regulatory, and legal environments. These environmental factors may change in ways that facilitate more vigorous competition. Thus, despite the parties' contention that current market shares overstate future competitive significance,[60] the opposite may be true. For example, wireless, cable, and VoIP

[60] E.g., see Bamberger, Carlton, and Shampine at p. 25.

technologies may increasingly provide viable alternatives to the wireline loop in some areas. When they have reached the point where they can in principle challenge wireline networks on a sufficiently broad basis, independent MCI and AT&T entities would be positioned as perhaps the most natural entrants into residential retail services. They might attempt entry themselves (as they have done in the past) or in partnership with an intermodal CLEC, or they might become acquisition targets for intermodal CLECs seeking to provide end-to-end service. Allowing the acquisition of these firms by Verizon and SBC (which is likely to practice mutual forbearance with Verizon) therefore removes the leading potential entrants.

(85) It is important to emphasize that the Commission should evaluate whether intermodal alternatives provide effective post-merger constraints at the retail level for Verizon's residential customers in particular geographic markets under the Merger Guidelines' criteria. There is a need to study seriously and systematically the extent and impact of intermodal alternatives on competition for residential subscribers. In view of apparent variations in competitive activity across different locations, this question must be addressed at a sufficiently granular level from a geographical perspective, as the Merger Guidelines require. Cable operators have certainly started to provide voice and data services in many markets. However, the extent of this activity may vary greatly from market to market, necessitating a granular analysis. In some areas, the cable operator does not yet provide phone service; in others, cable companies have not yet deployed facilities, especially in rural areas where MCI and Verizon have strong market positions. It is important to assess the competitive impact of cable telephony from a careful analysis of market outcomes, including its effect on SBC's pricing.

(86) The Commission has not yet endorsed the view that wireless provides a meaningful competitive alternative to wireline. This remains an issue for the Commission to evaluate in the context of post-merger market power on a market-by-market basis. The Commission should examine whether, as many argue, wireless and wireline services function more as complements than as substitutes. There is dispute as to how many households have actually "cut the cord" and gone completely wireless. For example, Partner Group reports that only two percent of U.S. households, or 2.2 million homes, have wireless-only services.[61] While there is reason to believe

[61] Reinhardt Krause, Investor's Business Daily, January 25, 2005, p. A08.

that this figure is higher in some areas than in others, the Commission has not yet reached a determination concerning wireless and wireline services that would validate the Verizon/MCI position, and should evaluate the issue in terms of post-merger market power on a market-by-market basis.

(87) It is also important to recall that Verizon Wireless (a Verizon joint venture with Vodafone) is a significant provider of wireless services. Within Verizon's own territory, Verizon Wireless accounts for [**redacted**] of wireless subscribers based on data from TNS. It is especially problematic for Verizon to argue that its own wireless services constrain the anticompetitive effects of its proposed acquisition of MCI. The FCC reached the same conclusion in its review of Cingular's acquisition of AT&T Wireless, finding that because SBC and BellSouth "derive such a significant portion of their revenues from their in-region wireline operations, [they] have an incentive to protect their wireline customer base from intermodal and intramodal competition."[62] In fact, it is more likely that the consolidation would reduce incentives for vigorous wireless/wireline competition. This is also consistent with the FCC's own findings in the Cingular/AT&T case.[63] Additionally, it is important to note that the FCC's decision in the Cingular/AT&T Wireless case found that wireless services are not in the relevant product market for wireline services -- that "most wireline customers do not now consider wireless service to be a close substitute for their primary wireline carrier."[64]

(88) While VoIP is emerging as an alternative to traditional switched voice services, its competitive impact on Verizon, in terms of price discipline, remains unclear and unproven. This effect likely varies by region, so a granular geographic analysis is again required. If residential customers have significant concerns regarding VoIP in terms of quality and security, its ultimate commercial success may be limited, at least until these problems are resolved. Additionally, VoIP's competitive effects on originating local traffic are inherently limited where broadband penetration is low. Consequently, the FCC should fully investigate the extent to which VoIP provides a significant restraint on a market-by-market basis before drawing any conclusions.

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62 *Memorandum Opinion and Order, Applications of AT&T Wireless Service, Inc. and Cingular Wireless Corporation for Consent to Transfer of Control*, WT Docket No. 04-70, FCC 04-255, at ¶237 (Oct. 26, 2004).

63 Ibid., ¶244.

64 Ibid., ¶247.

V. VERTICAL CONCERNS

(89) The overarching vertical concern is whether the transaction essentially reestablishes the pre-Modified Final Judgment (MFJ) environment for traffic originating or terminating within Verizon's region. Based on my preliminary analysis, it appears that the merger could well increase both Verizon's incentive and opportunity to artificially handicap unintegrated or partially integrated rivals, to the detriment of consumers. These concerns become more salient in the context of a SBC-AT&T deal, as the twin transactions would result in two regional, fully integrated near monopolists, each with little likelihood of challenging the other in its home territory.

V.1. Existing incentives and opportunities for abuse

(90) Under a variety of conditions, vertically integrated firms with significant market power at one or more levels of a vertical chain have incentives to create artificial disadvantages for unintegrated (or partially integrated) rivals. Regulation can create this incentive by limiting the wholesale price of an input over which the integrated firm has market power. By denying or impairing competitors' access to the critical input, the integrated firm increases the costs and/or degrades the quality of rivals' final products. This permits the integrated firm to exercise its latent market power over the input by raising the price of the final product, or (if this is not allowed) simply by capturing a larger share of the market for the final product at a price exceeding variable cost. Notably, in some settings, similar incentives exist even when price regulation is absent.

(91) Verizon continues to have significant market power over many elements of the local network. Competitors offering final services to consumers in competition with Verizon—like CLECs and IXCs—are dependent on access to Verizon's network. Moreover, it appears that Verizon continues to face binding price regulation with respect to the wholesale prices of critical network elements. Consequently, Verizon has a strong incentive to deny or impair competitors' access to these critical inputs.

(92) The history of Verizon's dealings with CLECs raises considerable concern that it does indeed have the incentive and opportunity to handicap rivals. To properly assess the likelihood of

anticompetitive vertical effects, a thorough investigation of past CLEC treatment by Verizon is therefore required.

V.2. The incremental effects of the proposed mergers

(93) The proposed Verizon/MCI and SBC/AT&T mergers heighten concerns about vertical abuses in at least three ways.

(94) First, as discussed in Section IV.2, the proposed merger consolidates Verizon's market power over components of the local network by removing the competitive alternatives offered by MCI, as well as AT&T (through mutual forbearance if SBC's proposed acquisition of AT&T materializes). Greater market power creates a greater incentive to engage in abuse, and to do so to a greater degree.

(95) Second, the merger provides Verizon with an extensive national network of long-distance transport facilities. Currently, Verizon relies to a great extent on independent IXC wholesalers for out-of-region long-distance transport. To the extent other rivals access Verizon's network through these IXCs, it would be challenging for Verizon to impair these rivals without also impairing its own services. Even if these other IXCs carried no other traffic, Verizon would be limited, by virtue of the independence of these IXCs, in its ability to create interconnection advantages for these IXCs, relative to other independent IXC wholesalers. This state of affairs would change after the merger. Verizon would rely to a much greater extent on in-house long-distance transport acquired from MCI. By controlling access to MCI's network, it would control access to its own network through MCI. Accordingly, it would be in a position to create artificial advantages for its out-of-region traffic without leaving opportunities for others to share those advantages. In addition, by virtue of owning MCI's facilities, it would have greater scope for engineering these artificial advantages. In this regard, it is notable that Verizon lists, as one of the advantages of the merger, an enhanced ability to better control and monitor end-to-end network performance.[65]

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[65] E.g., see Bamberger, Carlton and Shampine at p. 21.

(96) Third, the mergers may also provide Verizon with additional and potent tools to cripple the CLECs. As noted previously, the Verizon/MCI deal, along with the proposed SBC/AT&T deal, would remove MCI and AT&T as independent facilities-based wholesalers supplying the CLECs with long-distance transport services (and call termination). This, by itself, may result in reduced competition and higher prices for necessary CLEC inputs. In addition, the remaining independent facilities-based IXCs are heavily dependent on Verizon and SBC, and may be considerably more susceptible to pressure than MCI and AT&T. Thus, direct control over MCI and AT&T may provide Verizon and SBC with considerably enhanced ability to damage the CLECs by making call termination more costly.

(97) The Verizon/MCI and SBC/AT&T deals would not literally recreate the pre-MFJ environment, inasmuch as there would be two regional near-monopolies rather than one nationwide near-monopoly. However, the consequences for consumers are potentially similar (to the extent the merged entities regionally specialize and practice mutual forbearance, which they have incentives to do).

VI. THE FUTURE OF INTERMODAL COMPETITION

(98) Though robust, nationwide, intermodal competition is not yet here, the remaining barriers to technical and economic feasibility may fall in the relatively near future. How soon this will occur is a matter of debate; it is by no means assured within any particular time frame. It appears in various geographic areas on a developing basis.

(99) In one optimistic vision for the future of this industry, many integrated firms will compete for each customer's business with end-to-end service offerings, with no firm holding a unique bottleneck.[66] Promoting the realization of this vision is a reasonable objective for public policy.

(100) However, abuses by Verizon (and SBC) have the potential to forestall the emergence of robust, integrated intermodal competition. This new generation of CLECs—those that offer comprehensive and competitive local services—cannot be expected to build complete, integrated national networks instantaneously. They will need to rely, at least for a time, on other firms (whether through contracts or acquisitions) to provide various components of their services, such as long-distance transport and call termination.

(101) If Verizon (and SBC) gain greater control over the services on which these new CLECs will need to depend, they will have greater ability to cripple CLEC growth and the eventual emergence of integrated intermodal competition. By way of analogy, the development of microwave relay for long-distance transport was a form of "intermodal competition" when MCI introduced it in the 1960's. But MCI had an uphill battle because it was dependent on the rest of the Bell System for access, and therefore vulnerable to the Bell System's abuses.

(102) Even when all technical and economic barriers to intermodal competition fall, Verizon (and SBC) will continue to have the ability and incentive to undermine competition from CLECs. This is because they will continue to have substantial control over call termination, simply by

66 E.g., see Remarks of Michael Powell before the Progress & Freedom Foundation, December 8, 2000 (available at http://www.fcc.gov/Speeches/Powell/2000/spmkp003.html.

virtue of their high market share. To understand why, suppose a CLEC network has a true economic advantage on call origination (reflected in a price differential), but a larger artificial disadvantage on call termination through Verizon's network (due to Verizon behavior). With high Verizon market share, most calls from the CLEC network will terminate on the Verizon network in its region. Consequently, as a result of Verizon's behavior, the CLEC's technologically superior service looks worse than Verizon's service from the customer's perspective. This means the customer will not sign up with the CLEC, which in turn implies that Verizon's market share (and its ability to extract supracompetitive rents) is self-sustaining.

(103) The proposed merger would consolidate Verizon's control over termination by placing more of the existing local capacity in its hands, and by placing other existing CLECs at a disadvantage by making them more dependent on Verizon.

(104) The proposed Verizon/MCI and AT&T/SBC mergers would, together, also increase the dependence of the new intermodal CLECs on Verizon and SBC. By significantly reducing the availability of independent sources of service components for completing nascent networks, and by removing MCI and AT&T as potential partners, the mergers would make the new intermodal CLECs more vulnerable to Verizon's and SBC's abuses.[67] These emerging competitors will probably fare better once they reach the point of committing to comprehensive telecommunications offerings if they are free to partner with (or acquire, or be acquired by) an independent AT&T and an independent MCI (or an MCI that remains meaningfully active in the wholesale market), rather than rely on SBC and Verizon, or on smaller firms that are in turn beholden to SBC and Verizon.

(105) Consequently, the vision of robust, integrated intermodal competition is better served by keeping MCI and AT&T independent of Verizon and SBC.

(106) This conclusion depends on the assumption that MCI and AT&T will remain in business as independent entities, or will be sold to alternative entities that will use the assets to compete with

[67] Indeed, both MCI and AT&T appear poised to engage in a substantial push to enroll VoIP subscribers absent this merger. As noted above, MCI was involved in several programs to expand its VoIP service in late 2003 and early 2004. Similarly, AT&T planned to expand its CallVantage[SM] VoIP product from areas of California, Massachusetts, New York, New Jersey, and Texas to 100 markets by the end of 2004.

SBC and Verizon, assuming the mergers are not consummated. In assessing the likelihood of this eventuality, it is important to distinguish sunk costs from other costs. MCI and AT&T have sunk enormous investments into network facilities, and financed these investments in part through borrowing. Inability to cover interest expense on debt does not threaten these firms as going concerns; it simply means that the firms may have to reorganize, with debt holders either making concessions or converting their claims to equity. Given that their large network costs are already sunk, one must raise serious questions concerning any assertions that MCI and AT&T would be unable to survive as going concerns in a low margin environment.

VII. REGULATORY ISSUES

(107) As economists from Nobel Laureates George Stigler to James Buchanan have pointed out, when the industries under the control of a regulatory body become able to secure policy outcomes that favor their private interests, the resultant "regulatory capture" will likely further reduce social welfare in those regulated markets already characterized by market failures.[68] Verizon's proposed acquisition of MCI and SBC's proposed acquisition of AT&T are paradigms of this concern.

(108) The acquisition of two of the largest and most vocal advocates of access (MCI and AT&T) by the two largest and most vocal opponents (Verizon and SBC) has enormous implications for the future of informed regulatory policy. In numerous filings before federal and state regulatory authorities, MCI (as well as AT&T) have been the most vocal proponents of opening up local access. As the largest and best financed of the CLECs, it is doubtful that the important roles played by MCI and AT&T in presenting countervailing arguments to such considerations will be replaced by the remaining CLECs. Given that the most common justification for government regulation is to correct market inefficiencies (such as monopoly power), limited information can be expected to exacerbate the market imperfections that regulatory intervention is intended to correct.[69]

(109) This change in the regulatory dynamic comes at a pivotal time, with Congress poised to revise the 1996 Telecommunications Act and many companies spending millions of dollars on advocacy and lobbying in their drive to change the law to benefit their industries.[70]

(110) MCI and AT&T, the acquisition targets whose voices would be quelled by the proposed transactions, have steadfastly represented the interests of the would-be CLEC competitors in

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68 See George Stigler, "The Theory of Economic Regulation," The Bell Journal of Economics (2:3-21, 1971) and James Buchanan, "An Economic Theory of Clubs, Econometrica (32:1-14, 1965). See also Jean-Jacques Laffont and Jean Tirole, "The Politics of Government Decision-Making: A Theory of Regulatory Capture," The Quarterly Journal of Economics (106:1089-1127, 1991).

69 See, generally, Dennis W. Carlton and Jeffrey M. Perloff, Modern Industrial Organization (Addison-Wesley, 2000, third edition), pp. 651-52.

70 Bara Vaida, "Plugging In for a Telecom Rewrite," National Journal, April 9, 2005.

these various forums. While I would expect other market participants seeking access, such as Qwest and the remaining CLECs, to take up some of the slack, I very much doubt that they will prosecute the competitive agenda with the same level of commitment, in terms of energy and resources, that MCI and AT&T have shown over the last couple of decades.

(111) Indeed, but for the fact that they are parties to these proposed mergers, MCI and AT&T would otherwise be the strongest voices raising concerns about the competitive problems the proposed mergers pose. Both MCI and AT&T raised such concerns about Verizon's acquisitions of NYNEX and GTE and SBC's acquisition of Ameritech. Now the proposed mergers have stilled those voices.

VIII. CONCLUSION

(112) The proposed transaction raises serious horizontal and vertical concerns. The parties' filings to date do not adequately address these concerns. Neither has Verizon nor MCI yet provided adequate data and other information to permit a thorough analysis of these concerns by other interested parties. No decision concerning the transaction should be taken until the horizontal and vertical concerns have been thoroughly investigated. Based on my preliminary analysis, it is my opinion that such an investigation will identify serious problems, and is likely to overturn claims that the transaction meets the Commission's public interest standard.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Signature: B. Douglas Bernheim

B. Douglas Bernheim

Date: May 9, 2005

Appendix A: B. Douglas Bernheim CV

January 2005

CURRICULUM VITAE

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Education

Massachusetts Institute of Technology, 1979-1982, Ph.D.

Harvard University, 1975-1979, A.B.

Academic Positions

Stanford University, Department of Economics, 1994-present. Lewis and Virginia Eaton Professor of Economics.

Princeton University, Department of Economics, 1990-1994. John L. Weinberg Professor of Economics and Business Policy.

Northwestern University, J.L. Kellogg Graduate School of Management, Department of Finance, 1988-1990. Harold J. Hines Jr. Distinguished Professor of Risk Management.

Stanford University, Department of Economics, 1987-1988. Associate Professor with tenure.

Stanford University, Department of Economics, 1982-1987. Assistant Professor.

Honors and Awards

John Simon Guggenheim Memorial Foundation Fellowship, 2001-02.

Fellow, Center for Advanced Study in the Behavioral Sciences, 2001-02.

Fellow of the American Academy of Arts and Sciences, elected 1997.

Fellow of the Econometric Society, elected 1991.

ACCF Center for Policy Research Fellowship, 1994.

Alfred P. Sloan Foundation Research Fellow, 1987-1989.

NBER-Olin Research Fellow, 1985-1986.

Awarded Hoover National Fellowship, 1985-1986 (declined to accept NBER-Olin).

National Science Foundation Graduate Fellowship, 1979-1982.

John H. Williams Prize, 1979 (first ranked graduate in Economics).

A.B. conferred Summa Cum Laude, 1979.

Edward Whitaker Memorial Scholarship, 1978 (outstanding public speaker of college class).

Phi Beta Kappa, 1978.

College Freshman National Debate Champion, 1976.

Teaching

Microeconomic Theory, Ph.D. level (Stanford and Princeton).

Public Finance, Ph.D. level (Stanford, Northwestern, and Princeton).

Industrial Organization, Ph.D. level (Princeton).

Insurance and Risk Management, Masters level (Northwestern).

Principles of Economics, undergraduate level (Stanford)

Intermediate Microeconomics, undergraduate level (Stanford).

Public Finance, undergraduate level (Stanford).

Professional Activities

Research Affiliations

Research Associate, National Bureau of Economic Research, 1986-present (Faculty Research Fellow from 1984 to 1986).

Senior Fellow of the Stanford Institute for Economic Policy Research, 1998-present.

Director, Stanford Institute for Theoretical Economics, 2001-2003.

Co-Director, Tax and Budget Policy Program, Center for Economic Policy Research at Stanford University, 1997-2002.

Co-Director, Center for Economic Policy Studies at Princeton University, 1993-1994.

Visiting Scholar, Federal Reserve Bank of Philadelphia, September 1991-August 1992.

Editorial Boards

American Economic Review (co-editor, 2002-present).

Journal of Public Economics (associate editor, 1998-2002).

Journal of Financial Intermediation (co-editor, 1989-1993)

Econometrica (associate editor 1987-1990)

Quarterly Journal of Economics (associate editor,1984-1990)

Organization of Conferences and Meetings

Organizer, CEPS/Princeton University Conference on Retirement Savings and Security, to be held in March 2002.

Organizer, CEPR/Stanford University Conference on Fundamental Tax Reform, December 1, 1995.

Co-organizer, NBER Conference on Saving, January 6-7, 1989.

Organizer, NBER Universities Research Conference on Social Insurance, April 28-29, 1989.

Chairman, Program Committee for the 1989 Winter Meeting of the Econometric Society.

Member, Econometric Society Program Committees: 1986 Winter Meeting, 1989 Summer Meeting, 1990 World Congress.

Other Service for Professional Organizations

Member, Frisch Medal Selection Committee, Econometric Society, 2001-2002.

Member of the Nominating Panel, American Academy of Arts and Sciences (Class III, Section 2 - Economics), 2000.

Steering Committee, Economics Training Initiative, Social Science Research Council, 1997-2000.

Steering Committee, Stanford Institute for Economic Policy Research, 1994-present.

Member, Board of Directors, American Council for Capital Formation, Center for Policy Research, 1993-present.

Member of the Panel on Social Security Privatization, National Academy of Social Insurance, and Chair of the Income Sub-Panel, 1997-1998.

Advisory Board Member, Americans United to Save Social Security, 1997.

Member, Board of Directors, Commission on Savings and Investment in America, 1993-1996.

Member, Finance Committee, American Economics Association, 1989-1990.

Publications

Research Papers in Academic Journals

"The Power of the Last Word in Legislative Policy Making," *Econometrica*, forthcoming (with Antonio Rangel and Luis Rayo).

"Memory and Anticipation," *Economic Journal*, forthcoming, April 2005 (with Raphael Thomadsen).

"How Do Residents Mange Personal Finances?" *American Journal of Surgery*, forthcoming (with Joel Teichman, Eric Espanoza, Patricia Cecconi, Neva Kerbeshian, Maraget Pearle, Glenn Preminger, and Raymond Leveille).

"Addiction and Cue-Triggered Decision Processes," *American Economic Review*, December 2004 (with Antonio Rangel).

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"How Do Urology Residents Manage Personal Finances?" *Urology*, 57(5), 2001, 866-871 (with Joel Teichman, Eric Espinosa, Patricia Parker, Joana Meyer, Margaret Pearle, Glenn Preminger, and Raymond Leveille).

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"A Tax-Based Test of the Dividend Signaling Hypothesis," *American Economic Review*, 85(3), June 1995, 532-551 (with Adam Wantz).

"A Theory of Conformity," *Journal of Political Economy* 102(5), October 1994, 841-877.

"Private Saving and Public Policy," *Tax Policy and the Economy* 7, 1993, 73-110 (with J. Karl Scholz).

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Books

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National Saving and Economic Performance, NBER-University of Chicago Press: Chicago, 1991 (co-editor, with J.B. Shoven).

The Vanishing Nest Egg: Reflections on Saving in America, Twentieth Century Fund/Priority Press: New York, 1991.

Editorials

"A country without a nest egg," *Los Angeles Herald Examiner*, October 25, 1987, F1-F4.

"Despite recent fixes, social security still faces day of reckoning," *Los Angeles Herald Examiner*, August 9, 1987, F3-F6.

"The wages of haste in the comparable worth debate," *Los Angeles Herald Examiner*, June 28, 1987, F1-F4.

"Are the deficit worries overblown?" *Los Angeles Herald Examiner*, April 12, 1987, F1-F4.

"Tax reform will force California to rethink goals," *Los Angeles Herald Examiner*, January 11, 1987, F1-F4.

"Boesky affair no reason to pass new laws," *Los Angeles Herald Examiner*, December 7, 1986, F1-F4.

"Congress has painted itself into a corner with tax reform," *Los Angeles Herald Examiner*, September 4, 1986, F1-F4.

Other Publications

"Taxes and Saving," in J. J. Cordes, R. D. Ebel, and J. G. Gravelle (eds.), *Encyclopedia of Taxation and Tax Policy*, Urban Institute Press: Washington D.C., 1999.

The Economic Role of Annuities, Catalyst Institute, 1998 (with Patrick J. Bayer and Michael J. Boskin).

"Who Will Pay for Retirement in the 21st Century," *NAVA Outlook*, May/June 1995, 4(3), 1-3.

"The Adequacy of Saving for Retirement and the Role of Economic Literacy," *Retirement in the 21st Century: Ready or Not?* Employee Benefit Research Institute, 1994, 73-81.

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"Premium Saving Accounts: A Proposal to Improve Tax Incentives for Saving," *LaFollette Policy Report* 5(1), Fall 1992, 1-2, 22-23.

Unpublished Research Papers

"A Solution Concept for Majority Rule in Dynamic Settings," revised September 2004, submitted to *Review of Economic Studies* (with Sita Nataraj).

"Self-Enforcing Cooperation with Graduated Punishments," July 2004 (with Dilip Abreu and Avinash Dixit).

"Special Interest Politics and the Quality of Governance," June 2004 (with Navin Kartik).

"Income Redistribution with Majoritarian Politics," May 2004 (with Sita Nataraj).

"Self Control, Saving, and the Low Asset Trap," mimeo, Stanford University, May 1999 (with Debraj Ray and Sevin Yeltekin).

"The Effects of Financial Education in the Workplace: Evidence from a Survey of Employers," mimeo, Stanford University, June 1996 (with Patrick Bayer and John Karl Scholz).

Work in Progress

"Cheating within Imperfect Cartels"

"Saving and Cue-Triggered Decision Processes" (with Antonio Rangel).

"Social Image and the 50-50 Norm: Theory and Experimental Evidence" (with James Andreoni).

"Memory and Re-experience Utility" (with Peter Coles).

"Power and Predictability in Legislative Bargaining"

"The Effects of Marital Status Transitions on Living Standards" (with Laurence Kotlikoff, Katherine Carman, and Neva Kerbeshian).

"Is Alcohol Consumption Impulsive? Evidence on the Effects of 'Blue Laws'" (with Neva Kerbeshian and Jonathan Meer).

"Multidirectional Signaling" (with Sergei Severinov).

Research Grants

"Theoretical Investigations of Some Empirical Puzzles Regarding Behavior in Relationships with Asymmetric Information," National Science Foundation, recommended for funding, December 2004 (with Avinash Dixit).

"Legislative Fiscal Policy Making with Reconsideration," National Science Foundation, June 2002 through May 2005.

"The Adequacy of Saving and Life Insurance - A Unique Case Study," National Institute on Aging, June 1999 through June 2002.

"The Adequacy of Saving and Insurance of Americans Approaching Retirement," National Institute on Aging, June 1997 through June 2000.

"Economic Literacy, Education, and Financial Behavior," National Science Foundation, July 1995 through July 1997 (co-sponsorship with Smith Richardson Foundation).

"Economic Literacy, Education, and Personal Saving," Smith Richardson Foundation, June 1995 through June 1997 (co-sponsorship with National Science Foundation).

"Behavioral Determinants of Household Financial Decisions," National Science Foundation, August 1994 through December 1995.

"Informational Imperfections and Economic Behavior," National Science Foundation, July 1991 through December 1993 (with Michael Whinston).

"Dividends and Corporate Financial Policy," National Science Foundation, July 1989 through December 1991 (with Laurie Bagwell).

"The Risk Adjusted Cost of Capital: An International and Intertemporal Comparison," Center for Economic Policy Research at Stanford University, June 1988 through June 1989.

"The Importance and Accuracy of Expectations," part of the NBER's project on the Economics of Aging, National Institute on Aging, December 1986 through December 1988.

"Understanding Intergenerational Transfers," National Science Foundation, August 1986 through July 1988.

"Comparable Worth," Center for Economic Policy Research at Stanford University, January 1986 through December 1986.

"The Roles of Risk and Insurance in Alternative Models of Personal Wealth Accumulation," Center for Economic Policy Research at Stanford University, January 1985 through January 1986.

"Planning Games," National Science Foundation, July 1984 through December 1986 (with Debraj Ray).

"Pension Annuities and Private Wealth Reconsidered," Center for Economic Policy Research at Stanford University, June 1983 through June 1984.

Ph.D. Dissertation Committees (Completed)

Abe, Yukiko
Anand, Bharat
Bagwell, Laurie
Bayer, Patrick
Besharov, Gregory
Borzekowski, Ronald
Bubna, Amit
Buiter, Perry
Cai, Hongbin
Calleja Alderete, Jaime
Carman, Katherine
Corts, Kenneth
Dasgupta, Aniruddha
Dinc, Serdar
Eisenberg, Daniel
Facchini, Giovanni
Fluck, Zsuzsanna
Gale, William
Garrett, Daniel
Graddy, Kathryn
Hege, Ulrich
Kanazawa, Mark
Kartik, Navin
Levenson, Alec
Levin, Laurence
Lindsey, Laura
Mathai, Koshy
Medina, Luis
Miller, Amalia
Nataraj, Sita
Navarro, Neva
Neher, Darwin
Nichols, Donald
O'Neill, Chanel
O'Reilly, Terrence
Ozler, Sule
Pasha, Hafiz
Rayo, Luis
Redding, Lee
Rork, Jonathan
Severinov, Sergei
Scholz, John Karl
Sen, Arijit
Sialm, Clemens
Smart, Michael
Stotsky, Janet
Tao, Zhigang
Thomadsen, Raphael
Van der Taak, Steven
Weinberg, Steven
Williams, Michael
Williams, Roberton
Wolff, Raymond
Yasuda, Ayako
Zhang, Lei
Zhou, Li-An
Zucker, John

Current Ph.D. Students

Ahoobim, Oren	Geyer, Francisca	Meer, Jonathan
Ali, Nageeb	Hatfield, John	Nicholson, Scott
Arias, Luz Marina	Henry, Emeric	Van Wesep, Edward
Console Battilana, Silvia	Ho, Benjamin	Zheng, Wentong

RECENT TESTIMONY AND CERTAIN DECLARATIONS

- *In the Matter of SBC Communications Inc. and AT&T Corp.* (WC Docket No. 05-65), declaration.
- *In re Vitamins Antitrust Litigation*, US District Court for the District of Columbia, deposition taken August 5-8, 2002; hearing testimony March 20, 2003; trial testimony June 2, 2003.
- *Amgen, Inc. vs. Ortho Pharmaceutical Corp.*, Endispute Arbitration, Chicago Illinois, The Honorable Frank J. McGarr, arbitrator, deposition taken November 30, 2001; hearing testimony May 15, 2002.
- *Highmark, Inc., et al. v. UPMC Health System*, civil Action No. 01-1114, US District Court for the Western District of Pennsylvania, deposition taken October 18, 2001.
- *In the Matter of Application by Bell Atlantic New York for Authorization Under Section 271 of the Communications Act to Provide In-Region, Interlata Service in the State of New York* (FCC 99-295, FCC 99-404), declaration.
- *Paper Systems, Inc. et al. vs. Mitsubishi et al.*, US District Court for the Northern District of California, deposition taken September 2-3, 1998.
- *In the Applications of Nynex Corporation, Transferor, and Bell Atlantic Corporation, Transferee* (FCC 97-286), declaration.
- *In the Matter of Motion of AT&T Corporation to be Reclassified as a Non-Dominant Carrier* (FCC 95-427), declaration.
- *In re Applications of Craig O. McCaw, Transferor, and American Telephone and Telegraph Company, Transferee* (FCC 94-238), declaration.